# Travis Zhang

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## Education

**Cornell University**, **College of Engineering,** Ithaca, NY                                  Sep 2020 – May 2024
*Bachelor of Science in Computer Science*
-   **Relevant Courses:** Multivariable Calculus, Discrete Structures, OOP and Data Structures, Introduction to Machine Learning

**Hamilton High School**, Chandler, AZ                                                           July 2016 – May 2020
-   **Weighted GPA**: 4.927/5.0, **Unweighted GPA**: 4.0/4.0
-   **Relevant Courses:** Multivariable Calculus, Differential Equations, Linear Algebra, AP Java, AP Physics C: Mechanics and E & M
-   **Honors:** Steve Sanghi Scholarship Award, Andy Grove Intel Scholarship, Impact Scholarship, National Honor Society Semifinalist Scholarship, Worth & Dot Howard Foundation Scholarship

## Experience

**ASU Robust Machine Learning Group**                                                           **Tempe, Arizona**
*Student Researcher*                                                                            *April 2019 – Present*
-   Applied transformation-invariant constraints on adversarial training using Tensorflow to improve Convolutional Neural Network (CNN) performance
-   Implemented 3 algorithms to reduce time for loss to converge for proposed methodology (up to 60% reduction)
-   Designed and implemented optimization algorithms in Pytorch to fool a Deep RL agent in a realistic scenario

**University of Central Florida's Competitive Programming Camp**                                **Orlando, Florida**
*Student*                                                                                       *June 2017 – July 2017*
-   Learned about various competitive programming algorithms including Dijkstra's algorithm and Prim's algorithm
-   Competed in 5+ programming competitions at the camp

**ASU Signal, Information, Networks, and Energy Laboratory**                                     **Tempe, Arizona**
*Student Researcher*                                                                            *Sep 2017 – April 2018*
-   Created program to temporally and spatially interpolate power outputs of solar panels using Python libraries
-   Analyzed patterns in cloud coverage and temperature to account for fluctuations in power output

## Leadership Activities

**Cornell Data Science**                                                                        **Ithaca, New York**
*Incoming Member for the Intelligent Systems Subteam*                                           *Nov 2020 – Present*

**Associate of Computer Science Undergraduates**                                                **Ithaca, New York**
*Academic Officer*                                                                              *Oct 2020 – Present*
-   Helped organize and host academic events including Research Night and internship/research panels

**Hamilton Robotics Team** ⭘                                                                     **Chandler, Arizona**
*Head of Electrical, Head of Communications*                                                    *Aug 2016 – May 2020*
-   Designed robot using Solidworks and used CNC router and mill to build precise parts
-   Programmed autonomous, teleoperated, and vision code for robot using Java and FRC WPI Library

**Mathworks Math Modeling Challenge** 🔗                                                         **Chandler, Arizona**
*Team Leader*                                                                                   *Jan 2019 – Feb 2020*
-   Developed and implemented mathematical models in Python to solve real-world problems
-   Wrote a 15+ page research paper to report experimental designs and results

## Personal Projects

**HackOurCampus Hackathon** ⭘                                                                   Aug 2020 – Sep 2020
-   Designed iOS app that reminded students to bring both COVID-related and personal items
-   Implemented Geofencing technologies to encourage social distancing and track when to send out reminders

**National Honor Society App**                                                                  July 2019 – Jan 2020
-   Developed both the iOS and Android mobile application for school's NHS club
-   Incorporated Google Firebase to create a personalized experience for users

**CUSD Equity Symposium App**                                                                   Nov 2018 – May 2020
-   Produced iOS app for the Chandler school district's annual equity symposium
-   Integrated Google Firebase to build a login system and to store symposium information in a database

**Skin Cancer Diagnosis using Neural Networks**                                                 Aug 2018 – April 2019
-   Built CNNs and Generative Adversarial Networks in Keras + Tensorflow to improve computer diagnosis of skin cancer

## Skills and Interests

**Skills:** Java, Python, Swift, C++, Keras, Pytorch, Tensorflow, Numpy, Pandas, Git/Github, HTML, CSS, LaTeX, Scikit-learn, SwiftUI
**Miscellaneous Skills:** Photoshop, Autodesk Inventor, Solidworks CAD, Welding, CNC Machine, Soldering, Milling
**Interests:** Photography, Tennis, Snowboarding, Adversarial Attacks in Machine Learning, Robotics, Airplanes